In the United States Patent and Trademark Office

Serial Number:
Appn. Filed:
Applicant(s): **ALEKSANDR L. YUFA**

#2
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12-897
A.C.

Appn. Title: **"METHOD AND DEVICE FOR COUNTING AND MEASURING PARTICLES"**

Examiner:
Group Art Unit:

Mailed: June 27, 1997

At: COLTON, CALIFORNIA

Information Disclosure Statement

Assistant Commissioner for Patents
Washington, District of Columbia 20231

Sir:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references listed on this form. The comments on the relevance of any non-English references, pursuant to Rule 98 are contained in the Prior Art section of the specification.

Applied Form-1449 and the Pertinent Parts of the References **19 sheets** .

Very respectfully,

Signature — ALEKSANDR L. YUFA (Name) — June 26, 1997 (Date)

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COLTON, CA. 92324

OTHER PRIOR ART
(Including Author, Title, Date, Pertinent Pages, Etc.)

AR R.G.Knollenberg, B.Schuster--"Detection and Sizing of Small Particles in Open Cavity Gas Laser," Applied Optics, Vo.11, No.7, November 1972, pp.1515-1520;

AS R.G.Knollenberg--"An Active Scattering Aerosol Spectrometer," Atmospheric Technology, No.2, June 1973, pp.80-81;

AR Schehl, Ergun, Headrick--"Size Spectrometry of Aerosols Using Light Scattering from the Cavity of a Gas Laser," Review of Scientific Instruments, Vol. 44, No.9, September 1973.

AS R.G.Knollenberg--"Active Scattering Aerosol Spectrometry," National Bureau of Standards Special Publication, No.412, October 1974, pp.57-64;

AR R.G.Knollenberg, R.E.Luehr--"Open Cavity Laser 'Active' Scattering Particle Spectrometry from 0.05 to 5.0 Microns," Fine Particles, Aerosol Generation Measurement, Sampling and Analysis, Academic Press, May 1975, pp.669-696;

AS R.G.Knollenberg--"Three New Instruments for Cloud Physics Measurements: The 2-D Spectrometer, the Forward Scattering Spectrometer Probe, and the Active Scattering Aerosol Spectrometer", American Meteorological Society, International Conference on Cloud Physics, July 1976, pp. 554-561;

AR R.G.Knollenberg --"The Use of Low Power Laser in Particle Size Spectrometry", Proceeding of the Society of Photo-Optical Instrumentation Engineers, Practical Applications of Low Power Lasers, Vo.92, August 1976, pp.137-152;

AS Elterman "Brewster Angle Light Trap," Applied Optics, Vol. 16, No. 9, September 1977.

AR Marple--"The Aerodynamic Size Calibration of Optical Particle Counters by Inertial Impactor," Aerosol Measurment, 1979.

AS Diehl, Smith, Sydor--"Analysis of Suspended Solids by Single-Particle Scattering," Applied Optics, Vol. 18, No. 10, May 1979.

AR K.Suda--Review of Scientific Instruments, Vol. 51, No. 8, August 1980, pp.1049-1058.

AS R.G.Knollenberg--"The Measurement of Particle Sizes Below 0.1 Micrometers", Journal of Environment Science, January-February, 1985, pp. 64-67.

AR K.Sasaki, M.Koshioka, H.Misawa, M.Kitamura, H.Masuhara--"Laser-Scanning Micromanipulation and Spatial Patterning of Fine Particles", Japanese Journal of Applied Physics, Vo.30, No.5B, May 1991, pp.L907-L909.

AS K.Sasaki, M.Koshiok, H.Misawa, M.Kitamura--"Optical Trapping of a Metal Particle and a Water Droplet by a Scanning Laser Beam", Applied Physics, Lett.60 (7), American Institute Physics, February 17, 1992, pp.79-82.

AR Peters--"20 Good Reasons to Use In Situ Particle Monitors",Semiconductor International, November 1992, pp.52-57.

AS Busselman et al.--"In Situ Particle Monitoring in a Single Wafer Poly Silicon and Silicon Nitride Etch System", IEEE/SEMI, Int'l Semiconductor Manufacturing Science Symposium, 1993, pp.20-26.

	A	B	C	D	E	F	G	H	I
1									
2	Applicant: A.Yufa								page 12
3									
4		**THE DEPTH OF THE PATENT SEARCH**							
5									
6									
7	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
8									
9			**THE UNITED STATES OF AMERICA PATENTS**						
10									
11	USA	3449567		356/335	378/51	6/10/69	APPARATUS AND PROCESS FOR...		
12	AUX		5530551	356/335	356/394	6/25/96	METHOD FOR APPARATUS FOR...		
13									
14									
15	USA	3451755		356/336	356/71	6/24/69	PARTICLES SIZE AND DISTRIB. ...		
16	JPX		5527714	356/336	436/534	6/18/96	PROCESS FOR DETERMINING...		
17									
18									
19	USA	3431424		356/337	250/576	3/04/69	OPTICAL FLUID SAMPLING DEVICE.		
20	USA		5510620	356/337	250/339.12	4/23/96	DETECTION OF TURBID OR...		
21									
22									
23	USA	3430220		356/338	340/578	2/25/69	FIRE DETECTOR.		
24	USA		5530540	356/338	356/246	6/25/96	LIGHT SCATTERING MEASUREM. ...		
25									
26									
27	USA	3436152		356/339	250/574	4/01/69	METHOD AND APPARATUS FOR...		
28	USA		5515164	356/339	250/576	5/07/96	PARTICLE SENSOR WITH LOW...		
29									
30									
31	USA	3450480		356/397	359/373	6/17/69	COMPARISON VIEWER.		
32	USA		5510891	356/397	356/30	4/23/96	OBJECT CHARACTERISTIC...		

	A	B	C	D	E	F	G	H	I
33									
34	Applicant: A.Yufa								page 13
35									
36	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
37									
38	JPX	3420609		356/340	250/205	1/07/69	PHOTOMETER FOR COMPARING...		
39	USA		5528365	356/340	356/341	6/18/96	METHODS AND APPARATUS FOR...		
40									
41									
42	USA	3420138		356/246	356/300	1/07/69	VARIABLE ANGLE ATTENUATED...		
43	USA		5530540	356/246	356/338	6/25/96	LIGHT SCATTERING...		
44									
45									
46	USA	3598994		356/317	250/458.1	8/10/71	METHOD AND APPARATUS FOR...		
47	USA		5528045	356/317	356/73	6/18/96	PARTICLE ANALYZER WITH...		
48									
49									
50	SEX	3432275		356/244	356/39	3/11/69	DISPLAY SLIDE FOR WET...		
51	USA		5527510	356/244	359/391	6/18/96	IN SITU PER AMPLIFICATION...		
52									
53									
54	JPX	3420609		356/341	250/564	1/07/69	PHOTOMETER FOR...		
55	GBX		5471299	356/341	356/336	11/28/95	APPARATUS AND METHOD FOR...		
56									
57									
58	USA	3510225		356/342	356/338	5/05/70	VISIBILITY INDICATING SYSTEM.		
59	USA		5506679	356/342	356/338	4/09/96	NEPHELOMETER INSTRUMENT.		
60									
61									
62	USA	3518437		356/343	250/208.5	6/03/70	APPARATUS FOR MEASURING...		
63	USA		5530540	356/343	356/246	6/25/96	LIGHT SCATTERING MEASUREM...		
64									

	A	B	C	D	E	F	G	H	I
65									
66	Applicant: A.Yufa								page 14
67									
68	Country	From Pat. #	To Pat. #	Class	Subclass	Issue Date	Title		
69									
70	USA	3463591		356/318		8/26/69	LASER SPECTROSCOPY.		
71	USA		5528045	356/318	250/458.1	6/18/96	PARTICLE ANALYZER...		
72									
73									
74	USA	3426211		356/436	356/436	2/04/69	REFRACTOMETERS.		
75	USA		5530553	356/436	356/440	6/25/96	FIBER OPTIC PROBE APPARATUS...		
76									
77									
78	USA	3458284		356/37	435/287.1	7/29/69	BACTERIAL DETECTION.		
79	USA		5374396	356/37	356/336	12/20/94	SYRINGE INJECTION SYSTEM...		
80									
81									
82	DEX	3422443		356/39	347/237	1/14/96	DEVICE FOR AUTOMATICALLY...		
83	USA		5526258	356/39	364/413.1	6/11/96	METHOD AND APPARATUS FOR...		
84									
85									
86	USA	3426208		356/301	250/200	2/04/96	METHOD AND APPARATUS FOR...		
87	USA		5528368	356/301	356/346	6/18/96	SPECTROSCOPIC IMAGING.		
88									
89									
90	USA	3459946		356/441	250/575	8/05/69	RADIATION SENSITIVE...		
91	USA		5509375	356/441	250/222.2	4/23/96	APPARATUS AND METHOD...		
92									
93									
94	DEX	3422271		356/442	250/565	1/14/69	RADIATION SENSITIVE...		
95	USA		5521376	356/442	250/574	5/28/96	OPTICAL MOTION SENSOR...		
96									

	A	B	C	D	E	F	G	H	I
97									
98	Applicant: A.Yufa								page 15
99									
100	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
101									
102	USA	3424912		356/73	356/446	1/28/69	OPTICAL INSTRUMENT FOR...		
103	USA		5528045	356/73	356/318	6/18/96	PARTICLE ANALYZER WITH...		
104									
105									
106	USA	3466450		356/440	250/357.1	9/09/69	SWIMMING POOL CHLORINE...		
107	USA		5530553	356/440	356/436	6/25/96	FIBER OPTIC PROBE...		
108									
109									
110	USA	RE29141		250/574	356/36	2/22/77	APPARATUS FOR ORIENTING...		
111	JPX		5530433	250/574	340/630	6/25/96	SMOKE DETECTOR INCLUDING...		
112									
113									
114	USA	3432675		250/227.11	365/126	3/11/69	OPTICAL PROGRAMMING WITH...		
115	USA		5530242	250/227.11	250/234	6/25/96	FIBER OPTIC SCANNING BEAM...		
116									
117									
118	USA	3431424		250/576	356/337	3/04/69	OPTICAL FLUID SAMPLING...		
119	DKX		5523560	250/576	356/427	6/04/96	METHOD AND APPARATUS FOR...		
120									
121									
122	JPX	3422263		250/435	361/231	1/14/69	IONIZED AIR PRODUCING DEVICE.		
123	USA		5523577	250/435	250/492.3	6/04/96	ELECTRON BEAM SYSTEM.		
124									
125									
126	USA	3446555		250.222.2	250/208.3	5/27/69	OPTICAL RANGING AND...		
127	USA		5509375	250/222.2	118/712	423.96	APPARATUS AND METHOD ...		
128									

	A	B	C	D	E	F	G	H	I
129									
130	Applicant: A. Yufa								page 16
131									
132	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
133									
134	JPX	3420609		250/564	356/340	1/07/69	PHOTOMETER FOR...		
135	ITX		5461479	250/564	356/381	10/24/95	METHOD FOR CONTROLLING...		
136									
137									
138	USA	3433964		250/573	250/324	3/18/69	PHOTOELECTROSTATIC FLUID...		
139	JPX		5530433	250/573	340/630	6/25/96	SMOKE DETECTOR...		
140									
141									
142	USA	3457420		377/11	250/556	7/22/69	PULSE DISTRIBUTION...		
143	USA		5464752	377/11	324/71,1	11/07/95	AUTOMATED ANALYZER FOR...		
144									
145									
146	USA	3431423		377/10	250/574	3/04/69	FORWARD SCATTER PHOTOM. ...		
147	USA		5510246	377/10	435/39	4/23/96	METHOD FOR RAPID QUANTIFIC. ...		
148									
149									
150	USA	3422274		377/53	250/201.4	1/14/69	RADIATION SENSITIVE...		
151	USA		5524129	377/53	340/556	6/04/96	PORTABLE COUNTER AND...		
152									
153									
154	USA	3649384		117/65	257/103	3/14/72	PROCESS FOR FABRICATING...		
155	JPX		5517942	117/65	117/948	5/21/96	PROCESS FOR PRODUCING...		
156									
157									
158	USA	3447016		313/323	439/57	5/27/69	REAR LOADING PANEL...		
159	JPX		5500571	313/323	313/635	3/19/96	METAL VAPOR DISCHARGE...		
160									

	A	B	C	D	E	F	G	H	I
161									
162	Applicant: A.Yufa								page 17
163									
164	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
165									
166	USA	3435373		372/34	372/35	3/25/69	TUNABLE RAMAN LASER.		
167	USA		5526372	372/34	372/69	6/11/96	HIGH ENERGY BURSTS FROM...		
168									
169									
170	USA	3428892		73/28.01	324/71.1	2/18/69	ELECTRONIC OLFACTORY...		
171	USA		5511409	73/28.01	73/28.04	4/30/96	MEASUREMENT OF EMISSION...		
172									
173									
174	USA	3473010		364/555	327/227	10/14/69	APPARATUS AND METHOD FOR...		
175	USA		5526258	364/555	364/413.1	6/11/96	METHOD AND APPARATUS FOR...		
176									
177									
178	USA	3457407		250/575	250/373	7/22/69	APPARATUS FOR QUANTITAT. ...		
179	USA		5482842	250/575	435/34	1/09/96	METHOD FOR DETECTING...		
180									
181									
182				**GREAT BRITAIN**					
183									
184									
185	GB	2237950		G01N15/02		11/03/89	APPARATUS FOR ANALYSIS..		
186	GB		2264556	G01N15/02	G01N15/14	2/21/92	DIFFRACTION ANALYSIS...		
187									
188									
189	GB	2106242		G01N21/00	E21B47/00	1/15/82	METHOD AND APPARATUS...		
190	GB		2255405	G01N21/00		5/03/91	ATMOSPHERIC LIQUID...		
191									
192									

	A	B	C	D	E	F	G	H	I
193									
194	Applicant: A.Yufa								page 18
195									
196	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
197									
198					**GERMANY**				
199									
200	DE	3510363		GO1N15/02		9/25/86	MEBANORDNUNG ZUR PARTIKEL...		
201							(METHOD FOR ANALYSIS OF...)		
202	DE		4228388	G01N15/02	G01N21/41	3/03/94	VORRICHTUNG ZUR...		
203							(METHOD OF THE SIZE DEMENT. ...)		
204									
205									
206									
207	DE	2528912		G01N21/00		9/23/79	VORRICHTUNG ZUR...		
208							(METHOD FOR MEASURING...)		
209	DE		4225395	G01N21/00	G01N29/00	2/03/94	ANORDNUNG ZUR...		
210							(DEVICE FOR ...)		
211									
212									
213									
214					**FRANCE**				
215									
216	FR	2091410		G01N15/02		5/10/71	APPAREIT POUR DETECTOR...		
217							(APPARATUS FOR DETECTING...)		
218	FR		2681693	G01N15/02	G01N23/84	9/24/91	DIPOSITIF D'ANALYSE...		
219							((DEVICE FOR ANALYSING...)		
220									
221									
222									
223									
224									

	A	B	C	D	E	F	G	H	I
225									
226	Applicant: A. Yufa								page 19
227									
228	**Country**	**From Pat. #**	**To Pat. #**	**Class**	**Subclass**	**Issue Date**	**Title**		
229									
230	FR	2083052		G01N21/00		1/27/71	PROCÉDÉ ET DISPOSITIF POUR...		
231							(MÉTHOD FOR ANALYSIS...)		
232	FR		2659448	G01N21/00	G01N31/02	3/08/90	METHODE DE DOSAGE DU...		
233							(METHOD FOR DOSING OF...)		
234									
235									
236									
237					**RUSSIA**				
238									
239	SU [RU]	464804		G01N15/02		9/21/71	УСТРОЙСТВО ДЛЯ ОПРЕДЕЛЕНИЯ...		
240							(DEVICE FOR THE DETERM. ...)		
241	SU [RU]		2027163	G01N15/02		1/20/95	УСТРОЙСТВО ДЛЯ ОПРЕДЕЛЕНИЯ ...		
242							(DEVICE FOR THE DETERM. ...)		
243									
244									
245									
246	SU [RU]	438906		G01N21/00		8/21/72	ГАЗОАНАЛИЗАТОР,		
247							(ANALYZER OF THE GAS.)		
248	SU [RU]		2031397	G01N21/00		3/20/95	СПОСОБ АНАЛИЗА ВОЛНОВЫХ...		
249							(METHOD FOR ANALYSIS OF...)		
250									
251									
252					**JAPAN**				
253									
254	JP			G01N15/01	from 1968 to 1992 yrs				
255		JOURNAL "TOKKE KOHO"							
256	JP			G01N21/00	from 1968 to 1992 yrs				